

ON WILLIAMSITA, A GENUS OF WASPS FROM NEW CALEDONIA (Hymenoptera, Sphecidae, Pemphilidini)BY V. S. L. PATE, *Cornell University, Ithaca, N. Y.*

In his report on the Aculeate wasps of New Caledonia¹ F. X. Williams described a curious and interesting new Pemphilid wasp—*Crabo novocaledonicus*—which he stated seemed to fit best into Kohl's species-group *Crabo* or its approximate equivalent, the genus *Ectemnius*. Through the courtesy of Dr. Joseph C. Bequaert of the Museum of Comparative Zoology, Harvard College, I have had the privilege of studying a pair of this species, and, as I suspected, *Crabo novocaledonicus* has proved to be the type of an interesting and discrete new group which is described below.

It gives me great pleasure to dedicate this new genus to Dr. Francis X. Williams of Honolulu, Hawaii, as a slight tribute in recognition of his many outstanding contributions to our knowledge of the biology and taxonomy of the Aculeate Hymenoptera.

WILLIAMSITA, new genus

Crabo Williams, Proc. Hawaii. Ent. Soc., XII, p. 448 (1945).

GENOTYPE: *Crabo novocaledonicus* Williams, 1945 [= *Williamsita novocaledonica* (Williams)].

The superficial habitus of *Williamsita* is very similar to that of *Ectemnius*, particularly the *Clytochrysus* section, but the present genus may be separated from the latter by the simple, thirteen-segmented antennae of the male, the curious conformation of the occipital carinule, and the very narrow and slender hind wing. In addition, the males of *Williamsita* lack an apical calcar on the middle tibiae and are furnished with a subquadrate pygidial area on the last abdominal tergite, whereas most males of *Ectemnius* have an apical calcar on the middle tibiae and lack a pygidial area.

Generic Characters.—Medium sized, opaque, finely punctate forms. Head subquadrate in dorsal and anterior aspect. Eyes naked, more coarsely faceted anteriorly than posteriorly; inner orbits strongly convergent toward clypeus and antennal sockets; malar space reduced to a mere line. Front narrow, strongly concave between inner orbits; scapal sinus immarginate. Vertex flat; supra-orbital foveae indistinct in males, moderately distinct in females; ocelli situated in a very low isosceles triangle. Occipital carina distinct, not a complete circle in extent nor attaining the posterior angles of hypostomal carinule margining the oral fossa, but curving downward below and running more or less parallel to the lateral margins of hypostomal carinule for about one-third to one-half the length of latter and terminating abruptly, often in a small tubercle. Antennae with sockets contiguous to each

¹Proc. Hawaiian Ent. Soc., XII, pp. 407-451 (1945).

other and also to nearest lower inner orbit; thirteen-segmented in males and twelve-segmented in females; scapes straight, elongate, subcylindrical to obterate, ecarinate lengthwise; flagellum simple in both sexes. Clypeus relatively simple; with a well developed median lobe. Mandibles with apices evenly bidentate in both sexes; in females with an additional subapical tooth on inner margins causing them to appear tridentate; inner margins edentate medially in both sexes; lower margins entire.

Thorax opaque; very finely punctate throughout. Pronotum moderately short, transverse, sharply carinate anteriorly. Mesonotum simple; very finely, evenly punctate throughout except discally and medioposteriorly where it is finely to strongly longitudinally aciculate. Axillae simple, immarginate; scutellum and postscutellum simple. Mesopleura finely, evenly punctate throughout; episternal suture distinct; mesopleural pit small but evident; prepectus sharply margined anteriorly, the carinate edge extending down for a short distance on each side onto mesosternum, the anterior edge of which, however, is broadly rounded; a sharp vertical carina before middle coxae. Propodeum finely sculptured; finely punctate to aciculate; without lateral carinae or a well defined dorsal trigonal enclosure.

Fore wing with marginal cell elongate, obliquely, exclusively truncate at apex; recurrent vein received in outer third of submarginal cell; second abscissa of cubitus much shorter than first abscissa and subequal in length to transverse cubital vein. Hind wings very narrow and elongate; anal lobe small, strap-like, one-third the length of submedian cell.

Legs relatively simple, without a tibial or femoral shield in males. Fore tarsi flattened to subpatellate in males; simple, without a distinct pecten in females; both sexes with a brushy pad beneath. Middle tibiae without an apical calcar in males; one present in females.

Abdomen sessile; fusiform; finely punctate; generally maculated. Tergites with basal acarid chambers; and folded under roundly and imbricate with the sternites, except first two tergites which have customary sharp inflexed lateral margins. Second abdominal sternite laterally on each side with an impressed, elongate oval, depression, larger in females than in males. Males with a small subquadrate pygidial area on last tergite. Females with pygidial area strongly narrowed, excavate and canaliculate apically, the lateral margins provided with brushes of golden setulae.

Ethology.—Nothing is known about the biology of the members of this genus, but inasmuch as the females have the pygidial area greatly narrowed, excavate, and canaliculate apically, it may be assumed with some degree of certainty that the component species are xylicolous forms which nest in wood or hollow or pithy stems and provision their nests with other insects—probably Diptera.

Remarks.—The discovery of *Williamsita* is of particular interest because it furnishes a link between the large, protean and cosmopolitan assemblages *Ectemnius* and *Lestica* and the

more generalized groups. In all probability, *Williamsita* is a relic of the ancestral stock which gave rise to *Ectemnius*: this more vigorous, vagile, and modern genus has probably supplanted the pro-Ectemnioid strain, exemplified by *Williamsita*, to the point where the latter has managed to survive in only a marginal area such as New Caledonia.

Williamsita novocaledonica (Williams)

Crabro novocaledonicus Williams, Proc. Hawaii. Ent. Soc., XII, p. 448, pl. XXVII, figs. A, Aa, B (1945); [δ : New Caledonia].

Type.— δ ; Hills behind Noumea, New Caledonia. October 16-19, 1940. (F. X. Williams; flying about a flowering shrub, evidently searching for females.) [Experiment Station, Hawaiian Sugar Planters' Association, Honolulu.]

Williams, when he described *novocaledonica*, had only males. Both sexes are represented in the material before me and I append below a description of the female and a fuller one of the male sex. Williams has illustrated the males in his characteristic excellent fashion.

Digm.— δ ; La Foa, New Caledonia. (C. L. Remington.) [Museum of Comparative Zoology, Harvard College.]

Male. Length 10 mm. Opaque black; the following citrinous: scapes; pronotum dorsally, tubercles; axillae; scutellum anteriorly with a transverse stripe interrupted medially; postscutellum; second abdominal tergite with an elongate, transverse, trigonal spot laterally on each side; fourth tergite with a narrow, transverse median fascia, narrowly interrupted medially and laterally; fifth tergite with a narrow basal fascia; fore femora with a broad, longitudinal stripe lengthwise beneath and a small basal spot above; fore tibiae with a small elongate spot externally at knee; middle femora with a broad strip lengthwise above and below posteriorly; middle and hind tibiae with a narrow stripe lengthwise on outer faces; hind femora with a narrow stripe dorsally. Fore wings rather heavily infuscated, particularly on anterior half; veins and stigma brunneous.

Head with a vestiture of appressed, light aureous sericeous pile on clypeus and along inner orbits; vertex thinly clad with inconspicuous puberulent aeneous hair; temples with a moderate vestiture of decumbent, silvery puberulent hair. Front strongly concave between inner orbits and glabrous medially; scapal sinus bisected by a fine impression which ends opposite distal end of scapes in a small fovea. Vertex with fine, close, setigerous punctures; bisected anteriorly by a fine line running forward from median ocellus; supra-orbital foveae very indistinct, elongate-linear; ocelli arranged in a very low isosceles triangle, the ocellocular line seven-eighths the postocellar distance. Occipital carina moderate above, flanged and foveolate below; conformation as in generic diagnosis. Antennae with scapes subcylindrical to subobterete, slightly flattened anteriorly but ecarinate lengthwise, about three-fifths

(0.6149) the vertical eye length; pedicel obtetete; flagellum simple, without excisions or other modifications; relative lengths: scape 43; pedicel 10; flagellar articles from first outwardly, 19:10:8:6:5:4:5:5:5:5:12. Clypeus teetate, almost three-eighths (0.3575) the vertical eye length; bisected by a strong keel which ends in a narrow truncate median lobe, the apex of which is thickened, polite, impunctate, glabrous; laterad of lobe and separated from it by a deep rounded emarginate is a dentiform angle. Mandibles stout, apices evenly bidentate; inner margins edentate.

Thorax opaque; finely punctate; with a thin clothing of puberulent hair, subaeneous and inconspicuous dorsally, appressed, silvery and very evident on pleura. Pronotum with dorsal face strongly notched medially, traversed by a rather strong torus, anterior margin with a strong, high, laminate, sinuate carina, humeri acute but not dentate, lateral margins rounded, eearinate, posterior margin very strongly impressed. Mesonotum simple, with fine, close puncturation anteriorly and laterally, becoming weakly, longitudinally striato-punctate discally and posteriorly; suture between mesonotum and scutellum very strongly impressed and weakly foveate; scutellum gently tumid, finely punctate and weakly, longitudinally striatopunctate; postscutellum finely punctate. Mesopleura with very fine, close, even puncturation throughout; episternal suture straight, oblique, strongly foveate; mesopleural pit small but evident. Metapleura glabrous; finely, horizontally aciculate; separated from lateral faces of propodeum by a foveate suture. Mesosternum, metasternum, and lower faces of all coxae with a dense brush of white hair. Propodeum on dorsal and posterior faces with a heavy vesture of decumbent light aureous pile, and finely punctatostriate to finely granulate; dorsal face separated along posterior and lateral sides, by a broad, shallow, indistinct, foveate groove from posterior and lateral faces, bisected by a narrow, linear, submarginate furrow which continues onto and also bisects posterior face which is traversed below by a few weak, horizontal wrinkles; lateral carinae absent, the posterior face evenly rounded into the glabrous, subfulgid, finely, horizontally aciculate lateral faces.

Legs with all femora stout, subfusiform. Fore tibiae subtriquetrous, flattened beneath, the ventro-anterior margin with a heavy brush of light hair. Fore tarsi strongly flattened, with a heavy brush of light sericeous hair below. Middle tibiae strongly obtetete, without spines on outer faces, without a distal calcar; middle metatarsi arcuate, excavate below, the ventro-anterior margin with a row of strong, short spinules. Hind tibiae obtetete, weakly spinose on outer faces; calcaria flattened, sublanceolate, the longer one one-half the length of the strongly compressed, elongate hind metatarsi which are one and a seventh times the length of four distal segments combined.

Fore wings with marginal cell three times as long as wide and broadly, obliquely, exelivously truncate at apex; radius with first abscissa about six-sevenths (0.84) the length of second abscissa, third abscissa

(truncation) two-fifths the length of second abscissa; transverse cubital vein oblique, inclivous, equal in length to second abscissa of cubitus which is one-third the length of first cubital abscissa. Hind wing very narrow.

Abdomen subfulgid; sessile; fusiform; with a moderate vestiture of decumbent silvery to very light aureous puberulent hair, most noticeable along apical margins of basal segments. Tergites with a very fine, even, rather close, setigerous puncturation throughout; first inconspicuously cingulate just before apex; seventh with a distinct, well defined, small subquadrate pygidial area, the disc flat, not furrowed but coarsely punctate, the apex truncate. Sternites practically impunctate, with a microscopically fine, cancellate sculpture; first two gently convex, remainder flattened discally; fifth with apical margin subtruncate; sixth with apex gently, broadly and shallowly excavate; seventh with apex truncate.

Allodigm.—♀; La Foa, New Caledonia. (C. L. Remington.) [Museum of Comparative Zoology, Harvard College.]

Female. Length 11 mm. Agrees with male except in following details:

Livery in general the same but anterior three-fourths of scutellum with a broad yellow band; second abdominal tergite with a broad median fascia widely interrupted medially; fourth tergite with a narrow, elongate, transverse median spot on each side of the median line; remaining tergites immaculate. Fore femora at apex and tibiae at base with a small spot; middle femora with a broad spot at apex; middle and hind tibiae with an elongate stripe on outer faces. Wings not as strongly infuscated as male.

Head with clypeus and facial concavity entirely covered with appressed sericeous light aureous pile. Vertex more finely punctate; supra-orbital foveae more distinct, elongate-lenticular, adjacent to and paralleling upper inner orbits; ocellocular line three-fourths the postocellar distance. Lower temples and gular region practically impunctate. Occipital carina as in male but ending ventrally in a strong tubercle. Antennal scapes about three-fifths the vertical eye length, ecarinate; flagellum broken, missing beyond first segment; relative lengths: scape 43; pedicel 10; flagellar article 18. Clypeus tectate; median length three-tenths the vertical eye length; bisected by a very strong keel which diverges medially into an elongate trigonal, glabrous, polite, impunctate, declivent platform ending in the gently and arcuate excised apical margin of the median lobe, laterad of which on each side is a dentiform angle. Mandibles with apices evenly bidentate, the inner margins edentate but with a strong subapical tooth making apices appear tridentate.

Thorax with anterior margin of pronotum not as strongly crested, the anterior laminate carina straight, not sinuate. Mesonotum finely, closely punctate anteriorly and laterally, the disc and medioposteriorly strongly, longitudinally aciculate and very sparsely punctate. Propodeum with a thinner vestiture; dorsal and posterior faces not separated

by a foveate groove and very finely punctato-aciculate, the bisecting groove wider and marginate.

Legs in general as in male but without modifications. Fore tarsi not flattened but somewhat compressed and with heavy sericeous pile beneath. Middle and hind tibiae more strongly spinose on outer faces; middle tibiae with a distinct apical calcar; middle metatarsi straight, elongate, subequal in length to four distal segments combined, and without row of spinules beneath. Longer hind tibial calcar one-half length of slender, compressed, elongate hind metatarsi which are one and an eighth the length of four distal segments combined.

Abdomen fusiform. Last tergite with pygidial area narrowed, excavate and canaliculate apically, the lateral margins with fringes of aeneous setulae.

This insular form is apparently generally distributed throughout New Caledonia.

**ATRICHOLAEALAPS MEGAVENTRALIS, A NEW SPECIES OF
PARASITIC MITE (Acarina, Laelaptidae)**

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In the collection of *Atricholaelops* loaned to me for study by the U. S. National Museum was a series of a distinctive species long recognized as new by both H. E. Ewing and E. W. Baker, but which for one reason or another remained undescribed. Recently this mite has been sent in frequently from various typhus research projects for determination and a name for it has become necessary. I wish to extend my thanks to the above mentioned men and to H. B. Morlan, H. D. Pratt, R. B. Eads, and others who have so kindly sent me additional specimens.

***Atricholaelaps megaventralis*, new species**

FEMALE.—Length, exclusive of gnathasoma, about 665 μ ; width about 431 μ . Ventral side (Fig. 4): The sternal plate is similar to that of other species of the genus. It is broader than long, averaging 119 μ wide by 92 μ long at the narrowest points. It bears the usual three pairs of setae and two pairs of pores. The endopodal plates are distinct but quite slender. The genitoventral plate is very large for the genus and closely approaches the anal plate. It bears one pair of setae and has the usual configuration of light lines. Its length, when measured from the base of the sternal plate is about 226 μ . The width at the widest point is 154 μ . The anal plate is roundly triangular with a slightly concave anterior margin. The anus is nearer the posterior seta than to the anterior margin. It measures 98 μ from the anterior margin to the posterior seta and about 105 μ in width at the widest point. There are